

**Figure 1: Nucleic Acid coding sequence human histamine H4**

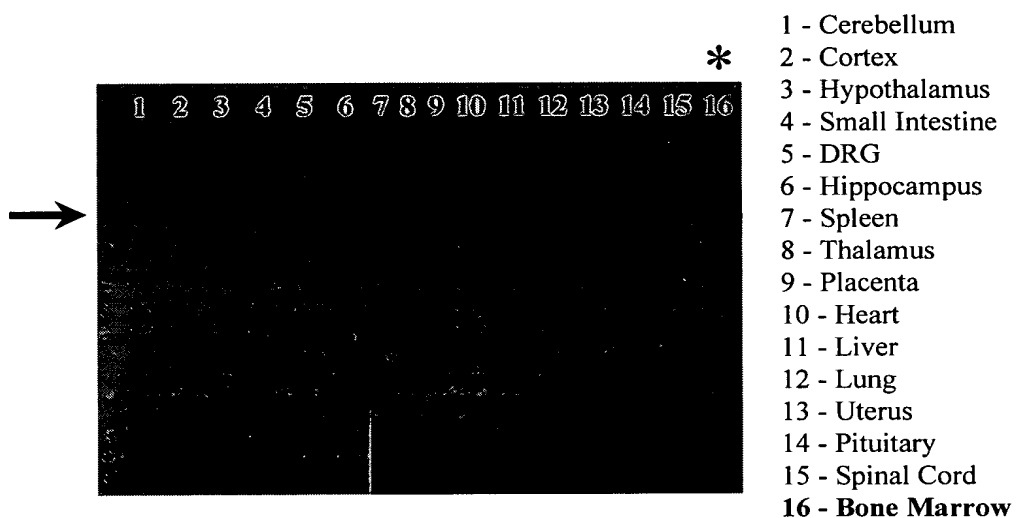
ATGCCAGATACTAATAGCACAAATCAATTTATCACTAAGCACTCGTGTTACTTTAGCATTT  
TTTATGTCCTTAGTAGCTTTTGCTATAATGCTAGGAAATGCTTTGGTCATTTTAGCTTTTG  
TGGTGGACAAAAACCTTAGACATCGAAGTAGTTATTTTTCTTAACCTGGCCATCTCTG  
ACTTCTTTGTGGGTGTGATCTCCATTCCTTTGTACATCCCTCACACGCTGTTTGAATGGG  
ATTTTGGAAAGGAAATCTGTGTATTTGGCTCACTACTGACTATCTGTTATGTACAGCAT  
CTGTATATAACATTGTCCTCATCAGCTATGATCGATACCTGTCAGTCTCAAATGCTGTGT  
CTTATAGAACTCAACATACTGGGGTCTTGAAGATTGTTACTCTGATGGTGGCCGTTTGG  
GTGCTGGCCTTCTTAGTGAATGGGCCAATGATTCTAGTTTCAGAGTCTTGGAAGGATGA  
AGGTAGTGAATGTGAACCTGGATTTTTTCGGAATGGTACATCCTTGCCATCACATCATT  
CTTGGAATTCGTGATCCCAAGTCATCTTAGTCGCTTATTTCAACATGAATATTTATTGGAG  
CCTGTGGAAGCGTGATCATCTCAGTAGGTGCCAAAGCCATCCTGGACTGACTGCTGTCT  
CTTCCAACATCTGTGGACACTCATTGAGAGGTAGACTATCTTCAAGGAGATCTCTTTCTG  
CATCGACAGAAGTTCCTGCATCCTTTTCATTGAGAGAGACAGAGGAGAAAGAGTAGTCTC  
ATGTTTTCTCAAGAACCAAGATGAATAGCAATACAATTGCTTCCAAAATGGGTTCCCTT  
CTCCCAATCAGATTCTGTAGCTCTTACCAAAGGGAACATGTTGAACTGCTTAGAGCCA  
GGAGATTAGCCAAGTCACTGGCCATTCTCTTAGGGGTTTTGCTGTTTGCTGGGCTCCAT  
ATTCTCTGTTTACAATTGTCCTTTTATTTTATTCCTCAGCAACAGGTCCTAAATCAGTTTG  
GTATAGAATTGCATTTTGGCTTCAGTGGTTCAATTCTTTGTCAATCCTCTTTTGTATCCA  
TTGTGTACAAAGCGCTTTCAAAAGGCTTCTTGAAAAATATTTTGTATAAAAAAGCAACC  
TCTACCATCACAAACACAGTCGGTCAGTATCTTCTTAA

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**Figure 2: Amino acid sequence human histamine H4 receptor**

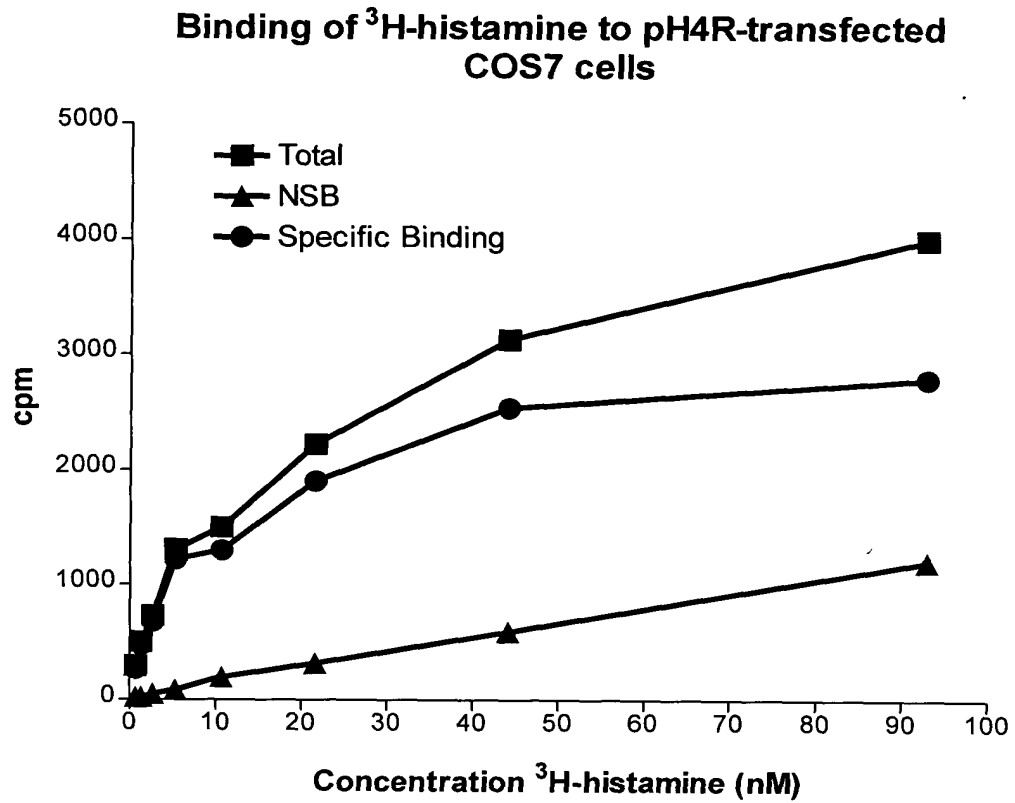
Met Pro Asp Thr Asn Ser Thr Ile Asn Leu Ser Leu Ser Thr Arg Val Thr Leu  
Ala Phe Phe Met Ser Leu Val Ala Phe Ala Ile Met Leu Gly Asn Ala Leu Val  
Ile Leu Ala Phe Val Val Asp Lys Asn Leu Arg His Arg Ser Ser Tyr Phe Phe  
Leu Asn Leu Ala Ile Ser Asp Phe Phe Val Gly Val Ile Ser Ile Pro Leu Tyr  
Ile Pro His Thr Leu Phe Glu Trp Asp Phe Gly Lys Glu Ile Cys Val Phe Trp  
Leu Thr Thr Asp Tyr Leu Leu Cys Thr Ala Ser Val Tyr Asn Ile Val Leu Ile  
Ser Tyr Asp Arg Tyr Leu Ser Val Ser Asn Ala Val Ser Tyr Arg Thr Gln His  
Thr Gly Val Leu Lys Ile Val Thr Leu Met Val Ala Val Trp Val Leu Ala Phe  
Leu Val Asn Gly Pro Met Ile Leu Val Ser Glu Ser Trp Lys Asp Glu Gly Ser  
Glu Cys Glu Pro Gly Phe Phe Ser Glu Trp Tyr Ile Leu Ala Ile Thr Ser Phe  
Leu Glu Phe Val Ile Pro Val Ile Leu Val Ala Tyr Phe Asn Met Asn Ile Tyr  
Trp Ser Leu Trp Lys Arg Asp His Leu Ser Arg Cys Gln Ser His Pro Gly Leu  
Thr Ala Val Ser Ser Asn Ile Cys Gly His Ser Phe Arg Gly Arg Leu Ser Ser  
Arg Arg Ser Leu Ser Ala Ser Thr Glu Val Pro Ala Ser Phe His Ser Glu Arg  
Gln Arg Arg Lys Ser Ser Leu Met Phe Ser Ser Arg Thr Lys Met Asn Ser Asn  
Thr Ile Ala Ser Lys Met Gly Ser Phe Ser Gln Ser Asp Ser Val Ala Leu His  
Gln Arg Glu His Val Glu Leu Leu Arg Ala Arg Arg Leu Ala Lys Ser Leu Ala  
Ile Leu Leu Gly Val Phe Ala Val Cys Trp Ala Pro Tyr Ser Leu Phe Thr Ile  
Val Leu Ser Phe Tyr Ser Ser Ala Thr Gly Pro Lys Ser Val Trp Tyr Arg Ile  
Ala Phe Trp Leu Gln Trp Phe Asn Ser Phe Val Asn Pro Leu Leu Tyr Pro Leu  
Cys His Lys Arg Phe Gln Lys Ala Phe Leu Lys Ile Phe Cys Ile Lys Lys Gln  
Pro Leu Pro Ser Gln His Ser Arg Ser Val Ser Ser

**Figure 3: Tissue Distribution of human histamine H4 receptor**



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**Figure 4: Binding of [<sup>3</sup>H]-histamine to pH4R expressing COS7 cells.**



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## FIGURE 5A

### Mouse H4 DNA coding region (SEQ.ID.NO.:5)

ATGTCGGAGTCTAACAGTACTGGCATCTTGCCACCAGCTGCTCAGGTCCCCTTGGCATTTTTAATGT  
CTTCATTTGCCTTTGCTATAATGGTAGGCAATGCTGTGGTCATCTTAGCCTTTGTGGTGGACAGAAA  
CCTTAGACATCGAAGTAATTATTTTTTTCTTAATTTGGCTATTTCTGACTTCCTCGTGGGTTTGATT  
TCCATTCTCTGTACATCCCTCACGTGTTGTTTAACTGGAATTTTGGAAGTGGAATCTGCATGTTTT  
GGCTCATTACTGACTATCTTTTGTGCACCGCATCTGTCTACAATATTGTCCTCATTAGCTACGATCG  
ATACCAGTCAGTTTCAAATGCTGTGTCTTATAGGGCTCAACACACTGGCATCATGAAGATTGTTGCT  
CAAATGGTGGCTGTTTGGATACTGGCTTTCTTGGTAAATGGCCCGATGATTCTGGCTTCAGATTCTT  
GGAAGAACAGCACGAACACAAAGGACTGTGAGCCTGGCTTTGTTACAGAGTGGTACATCCTCACCAT  
TACAATGCTCTTGAATTCCTGCTTCCTGTCTCTGTGGCTTATTTCAATGTACAGATTTACTGG  
AGCCTGTGGAAGCGTAGGGCTCTCAGTAGGTGCCCTAGCCATGCTGGATTCTCCACTACCTCTTCCA  
GTGCTTCAGGACACTTACACAGAGCTGGGGTGGCTTGACAGGACAAGTAATCCTGGATTGAAGGAATC  
AGCTGCATCTCGTCACTCAGAAAGTCCTCGAAGAAAGAGCAGCATCCTGGTGTCTTAAGGACTCAC  
ATGAACAGCAGTATCACTGCCTTCAAAGTGGGTTCTTCTGGCGATCGGAAAGTGCAGCGCTTCGCC  
AAAGGGAGTACGCAGAGCTTCTCAGAGGCAGGAAGCTAGCCAGGTCACTGGCCATCCTTCTGAGCGC  
TTTTGCCATTTGCTGGGCTCCATACTGTCTGTTTACAATTGTCCTTTCACTTACCCAGAACGGAA  
CGCCCCAAATCGGTGTGGTACAGCATTGCCTTCTGGCTGCAATGGTTCAATTCGTTTGTTAATCCCT  
TTCTGTACCCTTTGTGTACAGGCGTTTCCAGAAGGCTTTCTGGAAGATACTTTGTGTGACAAAGCA  
ACCAGCGCTGTACAGAACCAGTCAGTATCTTCTTGA

**FIGURE 5B**

**Rat H4 DNA coding region (SEQ.ID.NO.:6)**

ATGTCGGAGTCTAACGGCACTGACGTCTTGCCACTGACTGCTCAAGTCCCCTTGGCATTTTTAATGT  
CCCTGCTTGCTTTTGCTATAACGATAGGCAATGCTGTGGTCATTTTAGCCTTTGTAGCAGACAGAAA  
CCTTAGACATCGAAGTAATTATTTTTTCTTAATTTGGCTATTTCTGACTTCTTCGTGGGTGTCATC  
TCCATTCTCTGTACATCCCTCACACGCTGTTTAACTGGAATTTTGGAAGTGAATCTGCATGTTTT  
GGCTCATTACTGACTATCTTTGTGCACAGCATCCGTCTACAGTATTGTCCTCATTAGCTACGATCG  
ATACCAGTCAGTTTCAAACGCTGTGCGTTATAGAGCACAGCACACTGGCATCCTGAAAATTGTTGCT  
CAAATGGTGGCTGTTTGGATACTGGCTTTCTTGGTCAATGGCCCAATGATTCTGGCTTCGGATTCTT  
GGAAGAACAGCACCAACACAGAGGAGTGCGAGCCTGGCTTTGTTACTGAGTGGTACATCCTCGCCAT  
TACAGCATTCTTGGAATTCCTGCTCCCTGTCTCCTTGGTGGTCTATTTCAAGTGTACAGATTTACTGG  
AGCCTGTGGAAGCGTGGGAGTCTCAGTAGGTGCCCTAGCCACGCTGGATTCATCGCTACCTCTTCCA  
GGGGCACTGGACACTCACGCAGAACTGGGTGGCTTGTTAGGACAAGTCTTCCTGGATTAAAGGAACC  
AGCCGCATCCCTTCATTTCAGAAAGTCCACGAGGAAAGAGCAGTCTCCTGGTGTCTTAAGGACTCAC  
ATGAGCGGTAGTATCATCGCCTTCAAAGTGGGTTCCTTCTGCCGATCAGAAAGCCCAGTGCTTCACC  
AGAGAGAGCACGTGGAGCTTCTCAGAGGCAGGAAGCTAGCCAGGTCGCTAGCTGTCCTCCTGAGTGC  
TTTTGCCATTTGCTGGGCTCCGTATTGCCTGTTTACAATTGTTCTTTCACTTATCGCAGAGGGGAG  
CGCCCCAAATCGATTTGGTACAGCATAGCCTTTTGGCTACAGTGGTTCAATTCACCTATTAATCCCT  
TTCTATACCCTTTGTGCCACAGACGTTTCCAGAAGGCTTTCTGGAAGATACTCTGTGTGACAAAGCA  
ACCAGCACCTTCACAGACCCAGTCAGTATCTTCTTGA

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## FIGURE 5C

Guinea Pig H4 DNA coding sequence (SEQ.ID.NO.:7)

ATGTTGGCAAATAACAGTACAATCGCCTTAACATCAATTA AAAATTTCTTTGACATTTT  
ATGTCTTTACTAGCTATTGCTATAATGTTAGGCAATGTCGTGGTCATTTTAGCTTTTATTG  
TGGACAGAAATCTTAGACATCGAAGTAATTACTTTTTTCTTAACCTGGCCATTGCAGACT  
TCTTTGTGGGTGCAATTGCAATTCCTCTGTACATACCTTCCTCGCTGACTTACTGGACTT  
CTGGAAAGCAAGCTTGTGTATTTTGGCTCATTACTGACTATCTTTTATGtACAGCATCTGT  
GTATAATATTGTCCCTCATCAGCTACGATCGCTACCAGTCAGTCTCAAATGCCGTGTGGTA  
TAGAGCTCAGCACTCTGGCACCTGGAAAATTGCTACTCAGATGGTGGCTGTTTGGATAT  
TCTCCTTCATGACAAATGGGCCGATGATTCTGATTTTCAGACTCTTGGCAGAATAGCACT  
ACAGAATGTGAACCTGGATTTTTTAAAAAAGTGGTACTTTGCTCTCCCTACATCATTATTG  
GAATTCCTGATCCCCATCTTGTTAGTTGCTTATTTTCAGCGCCCATATTTACTGGAGCCTG  
TGGAAGCGAGAGAACTGAGCAGGTGCCTCAGCCACCCTGTACTCCCCCTGACTCTTC  
CAGCAGTGACCACGGACACTCCTGCAGACAGGACCCCGATTCAAGGGCGACTCTGCCA  
GCACGGAAAGAAACAACCTGCCTCTCTTGGTTCAGACAAGTCACGGAGAAAGAGCAGTC  
TCTTGTTTTCCATAAGAGCCTACAAGAACAGCAATGTGATCGCTTCCAAAATGGGCTTC  
CTCTCCCACTCAGATTCCCTGGCTCTTCAGCAAAGGGAACATATCGAACTTTTCAGAGC  
CAGGAAATTAGCCAAGTCACTGGCCATACTCTTAGCAGCTTTTGCCATTTGCTGGGCTCC  
ATATTCACTGACTACAGTTATCTACTCATTTTTTCCTGAAAGGAACTTGACTAAATCAAC  
CTGGTACCATACTGCCTTTTGGCTCCAGTGGTTCAATTCCTTTGTAAATCCCTTTTGTAT  
CCATTGTGTCACAAACGTTTTTCAGAAGGCTTTTCCTGAAAATACTTCCTGTGAGAAGGCA  
ATCCACGCCACCACACAACCGCTCAATATCCACTTGA

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**FIGURE 6A**

Mouse histamine H4 receptor protein sequence (SEQ.IN.NO.:8)

MSESNSTGILPPAAQVPLAFLMSSFAFAIMVGNAVILAFVVDNRNLRHRSNYFFLNLAISDFL  
VGLISIPLYIPHVLFNWNFGSGICMFWLITDYLLCTASVYNIVLISYDRYQSVSNVSYRAQH  
TGIMKIV AQMVAVWILAF LVNGPMILASDSWK NSTNTKDCEPGFVTEWYILTITMLLEFLLP  
VISVAYFNVQIYWSLWKRRALSRCP SHAGFSTTSSSASGHLHRAGVACRTSNPGLKESAASR  
HSESPRRKSSILVSLRTHMNSSITAFKVGSFWRSESAALRQREYAELLRGRKLARSLAILLSA  
FAICWAPYCLFTIVLSTYPRTERPKSVWYSIAFWLQWFNSFVNPFLYPLCHRRFQKAFWKIL  
CVTKQPALSQNQSVSS

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**FIGURE 6B**

Rat histamine H4 receptor protein sequence (SEQ.ID.NO.:9)

MSESNGTDVLPLTAQVPLAFLMSLLAFAITIGNAVVILAFVADRNLRHRSNYFFLNLAISDFF  
VGVISIPLYIPHTLFNWNFGSGICMFWLITDYLLCTASVYSIVLISYDRYQSVSNVRYRAQH  
TGILKIVAQMVA VWILAFLVNGPMLASDSWKNSTNTEECEPGFVTEWYILAITAFLEFLLPV  
SLVVYFSVQIYWSLWKRGSLSRCPSHAGFIATSSRGTGHSRRTGLACRTSLPGLKEPAASLH  
SESPRGKSSLLVSLRTHMSGSIIFKVGSFCRSESPVLHQREHVELLRGRKLARSLAVLLSAF  
AICWAPYCLFTIVLSTYRRGERPKSIWYSIAFWLQWFNSLINPFLYPLCHRRFQKAFWKILCV  
TKQPAPSQTQSVSS

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**FIGURE 6C**

Guinea Pig histamine H4 receptor protein sequence (389 amino acids)  
(SEQ.ID.NO.:10)

MLANNSTIALTSIKISLTFLMSLLAIAIMLGNVVVILAFIVDRNLRHRSNYFFLNLAIDFFVG  
AIAIPLYIPSSLTYWTSGKQACVFWLITDYLLCTASVYNIVLISYDRYQSVSNVWYRAQHS  
GTWKIATQMVAVWIFSFMTNGPMLISDSWQNSTTECEPGFLKKWYFALPTSLLLEFLIPILLV  
AYFSAHIYWSLWKREKLSRCLSHPVLPDSSSSDHGHSCRQDPDSRATLPARKETTASLGSD  
KSRRKSSLLFSIRAYKNSNVIASKMGFLSHSDSLALQQREHIELFRARKLAKSLAILLAFAIC  
WAPYSLTTVIYSFFPERNLTKSTWYHTAFWLQWFNSFVNPFLYPLCHKRFQKAFLKILPVRR  
QSTPPHNRSIST

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Human:	ATGCCAGATCTAATTAAGCAACAATCAATTAATCACTAAGACAGCTGGTACTCTTACCATTTTTTATGTCCTTAGTAGCTTTTGCTATATATGCTAGAGAAATGCTTTGGTCAATTTAGCTTTT	120
Guinea Pig:	ATGTGGCAATTAACAGTACAAATGCGCTTAACA---TCAATTAATAATTTCTTGGACATTTTATATGCTTTACTAGCAATTTGCTATATATGTTAGCAATGCTGTGTCATTTAGCTTTT	117
Mouse:	ATGTGCGAGTCTAAACAGTACTGGGCATCTTGGCCACCAAGCTGTCAAGTCCCTTTGGCATTTTATATGCTTCAATTTGCCCTTTGGCTATATATGTTAGCAATGCTGTGTCATTTAGCTTT	120
Rat:	ATGTGCGAGTCTAAACGCGCACTGACGCTCTTGGCACAAGTACTGTCAAGTCCCTTTGGCATTTTATATGTCCTGCTTTTGGCTATATACAAATAGGCAATGCTGTGTCATTTAGCTTT	120
Human:	GTGGTGGACAAAACCTTGTAGACATCGAAGTAGTATATTTTTTTCTTAACCTTGGCCACTGTGACCTCTTTGTGGGAGTATCCATTCCTTTGTATACATCCCTCAACGCTGTTCGAATGG	240
Guinea Pig:	ATTGTGGACAGAAATCTTGTAGACATCGAAGTATTTCTTTTCTTAACCTTGGCCACTGTGACAGCTCTTGTGGGAGTATGCAATTCCTGTATACATCCTTCCGCTGACTTACCTGG	237
Mouse:	GTGGTGGACAGAAACCTTGTAGACATCGAAGTATATTTTTTTCTTAATTTGGCTATTTCTGACTTCCCTCGGGGTGTGATTTCCATTCCTCTGTACATCCCTCAACGCTGTTTAACTGG	240
Rat:	GTAGCAGACAGAAACCTTGTAGACATCGAAGTATATTTTTTTCTTAATTTGGCTATTTCTGACTTCTTGGGGGTGATTCATCCATTCCTGTACATCCCTCAACGCTGTTTAACTGG	240
Human:	GATTTTGGAAAGGAATCTGTGTATTTTGGGCTCACTAGTACATCTGTATATGTACAGACATCTGTATATAATTCCTTCATCAGCTATATGATACGATACCTGTCAAGTCTCAAAATGCTGTG	360
Guinea Pig:	ACTTCTGGAAACCAACCTGTGTATTTTGGGCTCACTAGTACATCTTTATATGTACAGACATCTGTATATAATTTGTCCTCATACGCTTAGCATGCTACAGTCAAGTCTCAAAATGCTGTG	357
Mouse:	AATTTTGGAAATGTGATTTGCGATCTTTTGGGCTCACTAGTACATCTTTTGTGGCAGACGATCTGTATACAGATATGTCTCATATATGTCCTCATACGATGATACAGTCAAGTCTCAAAATGCTGTG	360
Rat:	AATTTTGGAAATGTGATCTGATCTTTTGGGCTCACTAGTACATCTTTTGTGGCAGACGATCTGTATACAGATATGTCTCATATATGTCCTCATACGATGATACAGTCAAGTCTCAAAATGCTGTG	360
Human:	TCTTATAGAACTCAACACTACTGGGGTCTTGAAGAATGTTTACTCTGATGAGTGGCCGTTTGGGTGTGCGCTTCTTAGTGAATGGGCCAATGATTTCTAGTTTCAGAGTCTTGGAAAGATGA	480
Guinea Pig:	TGGTATAGAGCTTCAGACCTGTGGCACTGGAAATATGTTACTCAAGATGGTGGCTGTTTGGGTGTGCGCTTCTTAGTGAATGGGCCAATGATTTCTAGTTTCAGAGTCTTGGCAAGATAGC	477
Mouse:	TCTTATAGAGGCTCAACAACCTGGGATCATGAAGATTTGTCTCAAAATGGTGGCTGTTTGGATATGCGCTTCTTGGTAAATGGCCCATGATTTCTGGCTTCAGATTTCTTGGAAAGAACGC	480
Rat:	CGTTATAGAGCAACAGCAACCTGGAAATGTTGCTCAAAATGGTGGCTGTTTGGATATGCGCTTCTTGGTCAATGGCCCAATGATTTCTGGCTTCGGAATTTCTTGGAAAGAACGC	480
Human:	GGT---AGT---GAATGTGAACCTGGATTTTTCGGAATGTACATCCCTTGGCCATCAATCATTTCTTGGAAATTCGTATATCCAGATCATTTAGTGGCTTATTTCAACATGAATATTTAT	594
Guinea Pig:	ACT---ACA---GAATGTGAACCTGGATTTTAAAAAAGTGTACTTTGCTCTCCCTACATCATTTATTTGGAAATTCGTATATCCCATCTGTGTATTTGCTATTTCAAGGCCCATATTTAC	591
Mouse:	ACGAACACAAAGGACAGTGTGAGCTGGGCTTTGTTACAGAGTGGTACATCTCAACATTAACATGCTCTTGGAAATTCGTGTCTCGTACATCTCTGGGCTTATTTCAATGACAGATTTTAC	600
Rat:	ACCAACACAGAGAGTGTGCGAGCTGGCTTTGTTACGAGTGTACATCTCGCATTAACAGATTTCTTGGAAATTCGTGCTCCCTGTCTCTTTGGTGTCTATTTCAAGTGTACAGATTTTAC	600
Human:	TGGAGCTGTGTGAAGCGTGTATCTCTCAGTAGGTGTGCCAAAGCCATCCTTGGACTG---ACTGTGTCTCTTCCAAACATCTGTGTGAACATCTCATTCAGAGTATATTTCTTCAAGGAGATCT	711
Guinea Pig:	TGGAGCTGTGTGAAGCGAGAGAACTGAGTAGGTGTGCCACCAACCTGTACTCCCTCTGTGACTCTTCCAGAGATGTACACAGGACACCTCTGACAAACAGAGACCCCGAATCAAGGGCGACT	711
Mouse:	TGGAGCTGTGTGAAGCGTGTGAGGCTCTCAGTAGGTGTGCCCTGACCATGCTGTGAATTC---TCCACTACCTCTTCCAGTGTCTTCAAGGACATTTTACACAGAGCTGGGGTGGCTGTGAGGACAGT	717
Rat:	TGGAGCTGTGTGAAGCGTGTGGAAGTCTCAGTAGGTGTGCCCTGACCAAGCTGTGAATTC---ATGCTACTCTTCCAGGGGCACTGTGACACTCACGCAAACTGGGTGGCTGTGAGGACAGT	717
Human:	CTTTCTGCATCGACAGAGTCTCTGCACTCTTTCATTCAGAGAGACAGAGGAAGAGTAGTCTCATGTTTTTCTTCAGAACCAAGATGAATAGCAATATACATTTGCTTCCAAATGGGT	831
Guinea Pig:	CTGCGCAGACGGAAGAAACAATGCGCTCTCTGTGTTCAAGCAAGTCAACGGAAGAGAGAGTCTCTTGTTTTCCATTAAGAGCTTACAGAAACAGCAATGATGTGCTTCCAAATGGGC	831
Mouse:	AATCTGTGATTTGAGAGTACAGTGTGATCTGTGCATCTGCACTCAGAAATGCTCTGAAAGAAAGAGAGCATCTGTGTCTCTTAAGAGTCAACATGAACAGCATATCATCTGCTTCAAAATGGGT	837
Rat:	CTTCTGTGATTTAAGGAACACGCGGCATCTCTTCATTCAGAAATCAACAGAGAAAGAGAGTCTCTGTGTCTCTTAAGAGTCAACATGAAGCGGTAGTATCATCGCTTCAAAATGGGT	837
Human:	TCTCTTCTCCCATCAGATTTCTGTAGCTCTTTCACAAAAGGGAACATGTTGAATCTGTAGAGCCAGGAATTAGCCAAAGTACATGCGCATTTCTTAAGGGGTTTTTGCTGTTTGGCTGGGCT	951
Guinea Pig:	TTCCTCTCCCATCAGATTCCTCTGGCTCTTTCAGCAAGGGAACATATGGAATCTTTCAGAGCCAGGAATTTAGCCAAAGTACATGCGCATTTTGAACATTTGCTGGGCT	951
Mouse:	TCTCTTCTGGCGATCTGGAAGTGCAGCGCTTCTGCAAGGGAGTAGTGCAGAGCTTCTCAGAGGCAAGGAAGCTTAGCCAGGTTCATGCGCATCTTCTGTAGGCGCTTTTGGCATTTTGGCTGGGCT	957
Rat:	TCTCTTCTGGCGATCAGAAAGCCAGTGTCTTTCACAGAGAGAGCAGCTGTGAGCTTCTCAGAGGCAAGGAAGCTTAGCCAGGTGTGCTAGTCTCTCTGTAGTGTCTTTTGGCATTTTGGCTGGGCT	957

Figure 7B

Human: CCATATTCCTGTTCACAATTCCTTCATTTTATTCCTCAGCAACAGGTCCTAATCAGTTTGTATAGAAATTCATTTTGGCTTCAAGTGTCAATTCCTTGTCAATCCTCTTTTG 1071

Guinea Pig: CCATATTCAGTACTACAGTTATCTACTCATTTTTCCTGAAAGAACTTGAATAATCAACTGTATCAATCTGCTTTTGGCTTCCAGTGGTTCAATTCCTTGTATATCCCTTTTG 1071

Mouse: CCATATGCTGTTCACAATTCCTTCAACTTACCCCAAGGAAAGCCCAATCGGTGTAGACGATTCGCTTCTGGCTGCANAGTTCAATTCGTTGTAAATCCCTTTCTG 1077

Rat: CCGTATGCGCTTCACAATTCCTTCAACTATCGCAGAGGGAGCGCCCAATCGATTTGTACAGCATAGCCTTTTGGCTACAGTGTCAATTCATTAATCCCTTTCTA 1077

Human: TATCATTTGTACAAAGCGCTTTCAAAAGGCTTTCTTGAATAATTTGTATATAAAGCAACCTTACCATTCACAAACAGTGGTCAGTATCTTTAA 1173

Guinea Pig: TATCATTTGTACAAACGTTTTCAGAAAGGCTTTCTGAAAATATCTTCTGTGAGAAAGGCAATCCAGCCACCA---CAGAACCGCTCAATATCCACTTGA 1170

Mouse: TACCTTTGTGTACAGAGCGTTTCCAGAAAGGCTTTCTGGAAGATATCTTGTGTGACAAAGCAACGAGCGCTGTCA---CAGAACAGTCAGTATCTTCTGA 1176

Rat: TACCTTTGTGTACAGAGCTTTCAGAAAGGCTTTCTGGAAGATATCTGTGTGACAAAGCAACGACACTTCA---CAGACCCAGTCAGTATCTTCTTGA 1176

Figure 8  
Amino Acid sequence Comparison of Human (SEQ ID NO:2), Guinea Pig (SEQ ID NO:10),  
Mouse (SEQ ID NO:8) and Rat H4 (SEQ ID NO:9)

Human:	MPDTNSTINISLSTRVTTLAEFMSLVAFAMIGNALVILAEVVDKNLRHRSYFFELNLAIISDFEFGVISIPLYIPHTLFEWDFGKEICVFMLITDYLCTA	100	
Guinea Pig:	MLANNSTIALT-SIKISLTFMLSLAIAIMIGNVVILAEFVDRNLRHRSNYFFELNLAIADFEVGAIAIPLYIPSSLTYWTSKGQACVFWLITDYLCTA	99	
Mouse:	MSESNSTGILPPRAQVPLAFLMSSFEAFAMVGNVILAEFVDRNLRHRSNYFFELNLAIISDFLVGLISIPLYIPHLFNNWNGSGICMEWLITDYLCTA	100	
Rat:	MSESNGTDVPLTAQVPLAFLMSLAFAITIGNAVVILAEFVADRNLRHRSNYFFELNLAIISDFEFGVISIPLYIPHTLFNNWNGSGICMEWLITDYLCTA	100	
Consensus:	M . N . T . L : : : : L : F : MSL : A : AIM : GN : VIIAF : D : NLRHRS : YFFELNLAI : DF : VG . I : IPLYIP . L W . G : C : FWL . TDYLCTA		
	TM1	TM2	TM3
Human:	SVYNIVLISYDRYLSVSNVSRTRQHTGVLIKIVTLMVAWVILAEFLVNGPMILVSESMKDEG-S-ECEPGFFSEMYLAIITSFLEFVLPVILVAYENMIY	198	
Guinea Pig:	SVYNIVLISYDRYQSVSNVWYRAQHSQTMKTIATQMAVWVIFSEMTNGPMILISDSWQNST-T-ECEPGFLKMYEALPTSLLEFLIPILVAYESAHIY	197	
Mouse:	SVYNIVLISYDRYQSVSNVSYRAQHTGMKIVAQMAVWVILAEFLVNGPMILASDSWKNSTNTKDCPEGFVTEWYILTTIMLLEFLIPVSAVYENVOIY	200	
Rat:	SVYSIVLISYDRYQSVSNVRYRAQHTGLIKIVAQMAVWVILAEFLVNGPMILASDSWKNSTNTECEPGEVTEWYILAITAFLEFLIPVSLVYFVSQIY	200	
Consensus:	SVYNIVLISYDRY SVSNV YR : QH : G . KI . MVAW : : : F : NGPMIL : S : SW : : : : : CEGGF . : WY : : : : T : LEF : : P : : : VAYF : : : IY		
	TM4	TM5	
Human:	WSLWKRDHLSRCQSHPGI-TAVSSNICGHSFRGLSSRRSLASSTEVPAFHSERQRRKSSIMFSSRTKMNSNTITASKMGFSQSQSDSVALHQREHVELLR	297	
Guinea Pig:	WSLWKREKLSRCLSHPVLPSSDSSSDHGHSCRODPDSRATLPARKEETASLGSDKSRKSSLLFSIRAYKNSNVITASKMGFLSHSDSLAQOREHIELFR	297	
Mouse:	WSLWKRRALSRCPSHAGF-STSSSASGHLHRAGVACRTSNPGIKESASARHSESPPRRKSSILVSLRTHMNSSITAFKVGSEFWKSESALRQREYAEILR	299	
Rat:	WSLWKRGSLSRCPSHAGF-IATSSRGTGHSRRITGLACRTSLPGIKEPASLHSESPRGKSSILVSLRTHMSGSIITAFKVGSEFCRSSEPVLAHQIEHVELLR	299	
Consensus:	WSLWKR : LSRC SH . : . SS . GH . R . : R : : : : . E . AS : S : : R . KSSL : : S R : . . . . . A . K : G : : : S : S : : L : Q E : : EL : R		
Human:	ARRLAKSLLAILLGVAVCWAPYSLFTIVISFYSSATGPKSVWYRIAEFWLQWENSEFVNPLLYPLCHKRFQKAFILKIFCIKKQPLPSQHSRSVSS	390	
Guinea Pig:	ARKLIAKSLLAILLAFAICWAPYSLTIVYSFPERNLTKSTWYHTAEFWLQWENSEFVNPLLYPLCHKRFQKAFILKILPVRQSTPP-HNRSIST	389	
Mouse:	GKRLARSLAILLSAFAICWAPYCLFTIVISTYPRTERPKSVWYSIAFWLQWENSEFVNPLLYPLCHRRFQKAFWKILCVTKQAPALSQ-NQSVSS	391	
Rat:	GKRLARSLAVLLSAFAICWAPYCLFTIVISTYRGERPKSIWYSIAFWLQWENSLINPLLYPLCHRRFQKAFWKILCVTKQAPAPSQ-TQSVSS	391	
Consensus:	. R : LA : SLA : LL . : FA : CWAPY : L T : : : S : : : . KS . WY : : AFWLQWENS : : NP : LYP LCH : RFQKAF . KI : : : Q : : : : RS : S :		
	TM6	TM7	